REMARKS

Claims 52-68 are currently pending in this Application. Claims 52-55, 61, 65, and 68, as well as the Abstract, have been amended with this Response.

Objections to the Abstract

The Abstract is objected to for informalities. In response, Applicant respectfully amends the Abstract.

Objections to the Specification

The Examiner objects to the Specification for referencing cancelled claims. Applicant respectfully requests that all reference to cancelled claims be amended from paragraphs 0030-0081 of the Specification.

Claim Rejections Under 35 U.S.C. §112, second paragraph

The Examiner rejects claims 52, 54, 65, and 68 under 35 U.S.C. §112, second paragraph. In response, Applicant respectfully amends claims 52, 54, 65, and 68.

Claim Rejections Under 35 U.S.C. §102(b)

Claims 52-55, 58, 59, 62, 66-68 are rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 5,738,104 to Lo (hereinafter "Lo"). Applicant respectfully traverses the rejections.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Applicant's claims 52 and 68 recite, *inter alia,*

"said apparatus is user controllable to receive as a first reference input signals from said means for providing signals which are indicative of said other muscle activity and to receive second reference input signals from said means for providing signals which are indicative of said particular muscle activity"

The above elements are directed, in an exemplary embodiment, to reception under user control of two different reference input signals that represent two different muscle activities (the 'particular' muscle activity which the apparatus is going to try to identify in the use mode and an 'other' muscle activity which tends to confound the detection of the 'particular' muscle activity). In an exemplary embodiment, the particular muscle activity is bruxism and the other muscle activity may be grimacing, which should be considered as representative for random mouth movements not amounting to bruxism. Based on the two different reference input signals, the apparatus as claimed is required to "identify therefrom at least one distinguishing criterion which differentiates said first reference input signals from said second reference input signals."

In light of the above, Lo does not teach an apparatus that receives first reference input signals from a means for providing signals that are indicative of *other* muscle activity, and receive second reference input signals from the means for providing signals which are indicative of the *particular* muscle activity. Instead, referring to column 16, lines 62 forward, Lo teaches a measuring device that seeks to isolate EKG signals from noise by an adaptive thresholding process. According to Lo et al, probable EKG pulses are spotted by determining the heart rate and then setting up a time window in which an EKG pulse might be expected to be seen, with average amplitude then be learned. The threshold is set at approximately 50% of the learned EKG pulse amplitude. Signals below this threshold are then considered to be background noise. Applicant respectfully asserts that this background noise is not a signal which is described to be the result of any specific

"other muscle activity," as is recited in Applicant's claims 52 and 68. The Lo passage the Examiner refers to (i.e. column 16, lines 33 to 48) references EMG signals from which EKG signals are to be distinguished, there is no teaching in Lo that would lead one to conclude that the background noise is the 'other muscle activity' recited in claims 52 and 68.

Furthermore, the background noise is not under the "controllable" by the user, as is also recited in claims 52 and 68. Claims 52 and 68 require that the apparatus be user controllable so as to receive the first reference signals and the second reference signals respectively. The background in Lo et al is always present and there is no disclosure of the user being able to control the apparatus to receive at one time the background and at another time the EKG signals. In Lo the criterion used to distinguish the EKG signals from the background is always the same (i.e. amplitude.) The calculation of the threshold is not based on measurement of the background signals at all. Instead the Lo device merely measures the amplitude of the EKG signals, averages it and halves the average. The background cannot be started and stopped by the user to register each type of signal separately, and thus, the apparatus cannot be controlled by the user to expect and to record each type of signal separately. The device of Lo also does not make any comparison between the EKG signals a the background, or attempt to deduce and differentiating characteristics therebetween. There is merely taught an assumption that the background will be much smaller in amplitude, so that any signal of an amplitude more than half the average EKG signal amplitude is an EKG signal.

By way of comparison, the apparatus of claims 52 and 68, in an exemplary embodiment, enable the apparatus to deal with a situation like that arising in bruxism monitoring where specific characteristics that differentiate signals relating to the particular muscle activity (bruxism) from the signals arising from the other muscle activity (grimacing) are not necessarily forecastable. Thus, signals to the other muscle activity may be deliberately provoked for the user to control the apparatus. In order expect to receive and register the signals separately the signals relating to the particular muscle

activity may be provoked. This allows the user to control the apparatus in a manner that allows the signal to be received and registered in their turn. Then the apparatus may be trained to distinguish between the signals. This involves the apparatus being configured "to process said first reference signals and said second reference signals to identify therefrom at least one distinguishing criterion which differentiates said first reference input signals from said second reference input signals," as recited in claims 52 and 68.

For at least the above reasons, Applicant respectfully asserts that Lo does not teach every element of Applicant's claims 52 and 68, or claims 53-55, 58, 59, 62, 66-67 that depend from 52.

Since Lo fails to teach or suggest all of the limitations of claims 52-55, 58, 59, 62, 66-68, Applicant respectfully submits that claims 52-55, 58, 59, 62, 66-68 are not anticipated by Lo.

Claims 52-59, 62, 63, 65, 67 and 68 are rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 4,669,477 to Ober (hereinafter "Ober"). Applicant respectfully traverses the rejections.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Applicant's claims 52 and 68 recite, *inter alia,*

"said apparatus is user controllable to receive as a first reference input signals from said means for providing signals which are indicative of said other muscle activity and to receive second reference input signals from said means for providing signals which are indicative of said particular muscle activity"

Ober does not teach an apparatus that receives first reference input signals from a means for providing signals that are indicative of *other* muscle activity, and receive second reference input signals from the means for providing signals which are indicative of the *particular* muscle activity. Instead, Ober describes a device in which detection of bruxism is attempted, but in which the sole criterion for the device treating received signals indicative of bruxism is their amplitude being above a threshold level that is manually adjusted via a control 32. Nothing in Ober corresponds to a user controllable set-up mode in which signals corresponding to bruxism (i.e. "particular muscle activity") on the one hand and corresponding to *some other muscle activity* on the other, are separately received. The set-up in Ober simply consists of turning the knob 32 to set an ad-hoc threshold level.

Applicant's claims 52 and 68 further recite, *inter alia,*

"wherein said apparatus is configured in said set-up mode to process said first reference signals and said second reference signals to identify therefrom at least one distinguishing criterion which differentiates said first reference input signals from said second reference input signals"

Ober also does not teach identification of distinguishing characteristics which differentiates said first reference input signals from said second reference input signals. As is explained in the Applicant's specification, a simple threshold is not an adequate criterion for distinguishing bruxism signals from other confounding muscle signals, because they may in fact have similar amplitudes. This is why the exemplary embodiments of the Applicant's apparatus perform frequency analysis of the respective signal types and deduce therefrom particular frequency criteria for distinguishing the signal types from one another. If one attempted to modify Ober by providing a user controlled set-up mode in which the amplitude of signals produced by grimacing (for example, "the particular muscle activity") was compared with the amplitude of signals produced by grinding the teeth (for example the "other muscle activity") in an attempt to deduce a

distinguishing threshold, this deduction would not work because the signals would be similar in amplitude.

For at least the above reasons, Applicant respectfully asserts that Ober does not teach every element of Applicant's claims 52 and 68, or claims 53-55, 58, 59, 62, 66-67 that depend from 52.

Since Ober fails to teach or suggest all of the limitations of claims 52-55, 58, 59, 62, 66-68, Applicant respectfully submits that claims 52-55, 58, 59, 62, 66-68 are not anticipated by Ober.

Claim Rejections Under 35 U.S.C. §103(a)

Claims 60, 61, 64, and 66 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ober in view of various combinations United States Patent No. 6,636,763 to Junker (hereinafter "Junker"), United States Patent No. 4,993,423 to Stice (hereinafter "Stice"), and United States Patent No. 5,368,043 to Sunouchi (hereinafter "Sunouchi"). Applicant respectfully traverses the rejections.

Applicant respectfully notes that claims 60, 61, 64, and 66 depend from claim 52. As such, for at least the reasons discussed in the 102 remarks, Ober does not teach every element of claims 60, 61, 64, and 66. Since none of Junker, Stice, or Sunouchi, taken alone or in combination remedy the deficiencies of Ober, any proposed combination of Ober, Junker, Stice, and Sunouchi does not teach every element of Applicant's claims 60, 61, 64, and 66. Thus, Applicant respectfully asserts that claims 60, 61, 64, and 66 are not obvious over any proposed combination of Ober, Junker, Stice, and Sunouchi. Further, as any proposed combination of Ober, Junker, Stice, and Sunouchi does not teach every element of Applicant's claims, combination or modification of the above references would not be obvious, or offer any reasonable chance of success.

Conclusion

All of the objections and rejections are herein overcome. In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. No new matter is added by way of the present Amendments and Remarks, as support is found throughout the original filed specification, claims and drawings. Prompt issuance of Notice of Allowance is respectfully requested.
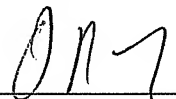
The Examiner is invited to contact Applicant's attorney at the below listed phone number regarding this response or otherwise concerning the present application.

Applicant hereby petitions for any necessary extension of time required under 37 C.F.R. 1.136(a) or 1.136(b) which may be required for entry and consideration of the present Reply.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicant's attorneys.

Respectfully submitted,

CANTOR COLBURN LLP

By: _____

Daniel R. Gibson
Registration No. 56,539
Cantor Colburn LLP
20 Church Street
22nd Floor
Hartford, CT 06103
Telephone: 860-286-2929
Facsimile: 860-286-0115
Customer No. 23413

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